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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,183	08/02/2006	Michael Mahler	3745	6721

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Huntington, NY 11743

EXAMINER

GALT, CASSI J

ART UNIT	PAPER NUMBER
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3662

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/588,183	Applicant(s) MAHLER ET AL.	
	Examiner CASSI GALT	Art Unit 3662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-11 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>1/28/2009</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, and 5- 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arndt (US 6,501,414).

Regarding claim 1, Arndt teaches a method for determining the thickness of material by penetrating the material, in particular a method for measuring the thickness of walls, ceilings and floors (9:14-20, esp. 19-20), with which a measurement signal (14, Fig. 1) in the gigahertz frequency range (9:53-57) emitted using a high-frequency transmitter (32, Fig. 1) penetrates the material (16, Fig. 2) to be investigated at least once and is detected by a high-frequency receiver (44, Fig. 1), wherein the thickness of the material is measured via at least two transit-time measurements ("time delay" 10:47-53) of the measurement signal performed for various positions (10:1-42, esp. "plurality of positions" 10:2) of the high-frequency transmitter and the high-frequency receiver operated in a same device (12, Fig. 1).

Arndt teaches that the device may be moved by manual means (10:38-39), and that this may be particularly desirable in some locations (10:41-42), but does not explicitly teach that the device is hand-held. However, hand-held devices of the type taught by Arndt are known in the art; for example, Arndt describes one such prior art device at 3:38-48 (see especially 3:47-48). It would have been obvious to modify Arndt by implementing the device as a hand-held device in order to facilitate the manual movement taught by Arndt and because it could be done with no new or unexpected results.

Regarding claim 2, Arndt teaches that the transmitter and receiver are operated on a first surface (38, Fig. 1) of the material, and that the signal from the transmitter is reflected back to the receiver (9:35-38), which reflection necessarily implies a “reflector means”. In the example of Fig. 1, object 18 acts as a reflector means.

Regarding claim 5, Arndt teaches that the measuring device is moved over a surface of the material to record the at least two transit-time measurements (10:1-42).

Regarding claim 6, Arndt teaches that the displacement path of the device is detected (10:11-13, 10:62-66).

Regarding claim 7, Arndt teaches that the measurement signal is generated in the gigahertz frequency range (9:53-57), but does not teach a pulsed-radar method.

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However, pulsed-radar methods are well known in ground penetrating applications of the type taught by Arndt. Further, Arndt teaches stepping the measurement signal over a plurality of frequencies (ab. 5-6), and it is known to implement such signals using pulses. It would have been obvious to modify Arndt by implementing the measurement signal using pulses because it could be done with no new or unexpected results.

Regarding claim 8, Arndt teaches that measurement frequencies fall in interval of 1500 MHz - 3500 MHz (9:56-57).

3. Claims 3, 9, 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arndt (US 6,501,414) in view of Nix (US 3,815,016) or Stump (US 5,904,210) or McEwan (US 6,492,933).

Regarding claims 3 and 9, the device taught by Arndt is clearly at least capable of being placed on a surface of a material. Arndt does not, however, teach a reflector means including a transponder, where the transponder is capable of being moved relative to the high-frequency measuring device. However, transponders of this sort are well known in the thickness measurement art. For example:

Nix teaches that "it is already known, for example in road construction, to arrange metal portions which will be subsequently called "reflectors" underneath the different covering layers, and to measure the distance to the reflector by means of a high frequency gauge" (col. 1 lines 18-23).

Stump teaches a method for detecting the depth of an underground boring tool using a radar probe and radar detection techniques in which the boring tool is provided with a device which generates a specific signal in response to a probe signal (ab. lines 1-6). Fig. 1 shows how probing and detection unit 28 transmits a probe signal 36 into the ground towards underground boring tool 24, and col. 4 lines 41-43 refer to a cooperative target 20 coupled to underground boring tool 24, which cooperative target is shown in Fig. 16. Col. 4 lines 47-59 teach that the cooperative target allows reflections from the underground boring tool to be readily distinguished from returns from other reflection sources. The cooperative target moves relative to probing and detection unit 28 as the boring tool to which it is coupled advances.

McEwan teaches a system for thickness measurement wherein an active reflector is used to provide accurate measurements even in cluttered environments (ab. 3-5). McEwan's active reflectors may be translated or rotated, as described at 12:25-32 with reference to Fig. 10A.

The reflector means taught by Nix, Stump, and McEwan may be considered transponders, and each serves to provide distinct reflections in order to facilitate thickness measurement. It would have been obvious to further modify Arndt by providing such a transponder in order to provide distinct reflections to facilitate thickness measurement.

Regarding claim 10, Arndt teaches a position detection system for recording a path (60, Fig. 1, as per 10:62-66).

Regarding claim 11, the limitations of claim 11 do not differ from those of claims 3 and are rejected on the same grounds.

Response to Arguments

4. Applicant's arguments with respect to claims 1-3 and 5-11 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CASSI GALT whose telephone number is (571)270-1469. The examiner can normally be reached on Mon-Fri 7:30AM-5:00PM, Alt. Fri, Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarcza can be reached on 571-272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

2/26/2009

/C. G./
Examiner, Art Unit 3662

/Thomas H. Tarcza/

Supervisory Patent Examiner, Art Unit 3662